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ADHD Sleep Problems: Causes and Tips to Rest Better Tonight!

Sleep disorders often disrupt attention deficit treatment in children and adults. Expert ADHD sleep advice for catching zzz's quicker, staying asleep better, and waking up healthier.

by William Dodson, M.D.

For many adults and children with attention deficit disorder (ADD ADHD), the thought of falling asleep easily, staying asleep through the night, and then waking up easily —- and refreshed -- seems but a dream.

ADHD adults know that their sleep can be disturbed by mental and physical restlessness, and that it can impact a person's ADHD treatment. But, as with most of our knowledge about adult ADHD, we're only beginning to understand a stronger ADHD-sleep link, resulting in difficulties falling asleep, staying asleep, and waking up.

Sleep disturbances caused by ADHD have been overlooked for a number of reasons. Sleep problems did not fit neatly into the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM) requirement that all ADHD symptoms must be present by age 7. Sleep disturbances associated with ADHD generally appear later in life, at around age 12 ½, on average. Consequently, the arbitrary age cutoff has prevented recognition of sleep disturbances in ADHD until recently, when studies of adults have become more common. Just as ADHD does not go away at adolescence, it does not go away at night either. It continues to impair life functioning 24 hours a day.

In early attempts to define the syndrome, sleep disturbances were briefly considered a criterion for ADHD, but were dropped from the symptoms list because evidence of them was thought to be too nonspecific. As research has expanded to include adults with ADHD, the causes and effects of sleeping disturbances have become clearer.

Many researchers expect them to return as a diagnostic criterion when the criteria for adult ADHD appear in the *DSM V* in 2010. For now, sleep problems tend either to be overlooked or to be viewed as coexisting problems with an unclear relationship to ADHD itself. Sleep disturbances have been incorrectly attributed to the stimulant-class medications that are often the first to be used to treat ADHD.

The four big sleep issues

No scientific literature on insomnia lists ADHD as a prominent cause of sleep disturbances. Most articles focus on sleep disturbance due to stimulant-class medications, rather than looking at ADHD as the cause. Yet adults with ADHD know that the connection between their condition and sleep problems is real. Sufferers often call it "perverse sleep"—when they want to be asleep, they are awake; when they want to be awake, they are asleep.

The four most common sleep disturbances associated with ADHD are:

1. Initiation Insomnia
About three-fourths of all adults with ADHD report inability to "shut off my mind so I can fall asleep at night." Many describe themselves as "night owls" who get a burst of energy when the sun goes down. Others report that they feel tired throughout the day, but as soon as the head hits the pillow, the mind clicks on. Their thoughts jump or bounce from one worry to another. Unfortunately, many of these adults describe their thoughts as "racing," prompting a misdiagnosis of bipolar mood disorder, when this is nothing more than the mental restlessness of ADHD.

Prior to puberty, 10 to 15 percent of children with ADHD have trouble getting to sleep. This is twice the rate found in children and adolescents who do not have ADHD. This number dramatically increases with age: 50 percent of children with ADHD have difficulty falling asleep almost every night by age 12 ½ by age 30, more than 70 percent of adults with ADHD report that they spend more than one hour trying to fall asleep at night.

2. Restless Sleep
When individuals with ADHD finally fall asleep, their sleep is restless. They toss and turn. They awaken at any noise in the house. They are so fitful that bed partners often choose to sleep in another bed. They often awake to find the bed torn apart and covers kicked onto the floor. Sleep is not refreshing and they awaken as tired as when they went to bed.

3. Difficulty Waking
More than 80 percent of adults with ADHD in my practice report multiple awakenings until about 4 a.m. Then they fall into "the sleep of the dead," from which they have extreme difficulty rousing themselves.

They sleep through two or three alarms, as well as the attempts of family members to get them out of bed. ADHD sleepers are commonly irritable, even combative, when roused before they are ready. Many of them say they are not fully alert until noon.

4. Intrusive Sleep
Paul Wender, M.D., a 30-year veteran ADHD researcher, relates ADHD to interest-based performance. As long as persons with ADHD were interested in or challenged by what they were doing, they did not demonstrate symptoms of the disorder. (This phenomenon is called hyperfocus by some, and is often considered to be an ADHD pattern.) If, on the other hand, an individual with ADHD loses interest in an activity, his nervous system disengages, in search of

something more interesting. Sometimes this disengagement is so abrupt as to induce sudden extreme drowsiness, even to the point of falling asleep.

Marian Sigurdson, Ph.D., an expert on electroencephalography (EEG) findings in ADHD, reports that brain wave tracings at this time show a sudden intrusion of theta waves into the alpha and beta rhythms of alertness. We all have seen "theta wave intrusion," in the student in the back of the classroom who suddenly crashes to the floor, having "fallen asleep." This was probably someone with ADHD who was losing consciousness due to boredom rather than falling asleep. This syndrome is life-threatening if it occurs while driving, and it is often induced by long-distance driving on straight, monotonous roads. Often this condition is misdiagnosed as "EEG negative narcolepsy." The extent of incidence of intrusive "sleep" is not known, because it occurs only under certain conditions that are hard to reproduce in a laboratory.

Bedtime Battles, Part 2

What's going on here?

There are several theories about the causes of sleep disturbance in people with ADHD, with a telling range of viewpoints. Physicians base their responses to their patients' complaints of sleep problems on how they interpret the cause of the disturbances. A physician who looks first for disturbances resulting from disorganized life patterns will treat problems in a different way than a physician who thinks of them as a manifestation of ADHD.

Thomas Brown, Ph.D., longtime researcher in ADHD and developer of the Brown Scales, was one of the first to give serious attention to the problem of sleep in children and adolescents with ADHD. He sees sleep disturbances as indicative of problems of arousal and alertness in ADHD itself. Two of the five symptom clusters that emerge from the Brown Scales involve activation and arousal:

- Organizing and activating to begin work activities.
- Sustaining alertness, energy, and effort.

Brown views problems with sleep as a developmentally-based impairment of management functions of the brain - particularly, an impairment of the ability to sustain and regulate arousal and alertness. Interestingly, he does not recommend treatments common to ADHD, but rather recommends a two-pronged approach that stresses better sleep hygiene and the suppression of unwanted and inconvenient arousal states by using medications with sedative properties.

The simplest explanation is that sleep disturbances are direct manifestations of ADHD itself. True hyperactivity is extremely rare in women of any age. Most women experience the mental and physical restlessness of ADHD only when they are trying to shut down the arousal state of day-to-day functioning in order to fall asleep. At least 75 percent of adults of both genders report that their minds restlessly move from one concern to another for several hours until they finally fall asleep. Even then, they toss and turn, awaken frequently, and sometimes barely sleep at all.

The fact that 80 percent of adults with ADHD eventually fall into "the sleep of the dead" has led researchers to look for explanations. No single theory explains the severe impairment of the ability to rouse oneself into wakefulness. Some ADHD patients report that they sleep well when they go camping or are out of doors for extended periods of time.

Baltimore-based psychiatrist Myron Brenner, M.D., noted the high incidence of ADHD individuals among the research subjects in his study of Delayed Sleep Phase Syndrome (DSPS). People with DSPS report that they can experience a normal sleep phase — for example, get into bed, fall asleep quickly, sleep undisturbed for eight hours, and awake refreshed — but that their brains and bodies want that cycle from 4 a.m. until noon. This is a pattern reported by more than half of adults with ADHD. Brenner hypothesizes that DSPS and the sleep patterns of ADHD have the same underlying disturbance of circadian rhythms. Specifically, he believes that the signal which sets the internal circadian clock (the gradual changes in light caused by the sun's setting and rising) is weak in people with ADHD. As a result, their circadian clock is never truly set, and sleep drifts into to the 4 a.m.-to-noon pattern or disappears entirely, until the sufferer is exhausted.

One hypothesis is that the lack of an accurate circadian clock may also account for the difficulty that many with ADHD have in judging the passage of time. Their internal clocks are not "set." Consequently, they experience only two times: "now" and "not now." Many of my adult patients do not wear watches. They experience time as an abstract concept, important to other people, but one which they don't understand. It will take many more studies to establish the links between circadian rhythms and ADHD.

How to get to sleep

No matter how a doctor explains sleep problems, the remedy usually involves something called "sleep hygiene," which considers all the things that foster the initiation and maintenance of sleep. This set of conditions is highly individualized. Some people need absolute silence. Others need white noise, such as a fan or radio, to mask disturbances to sleep. Some people need a snack before bed, while others can't eat anything right before bedtime. A few rules of sleep hygiene are universal:

- Use the bed only for sleep or sex, not as a place to confront problems or argue.
- Have a set bedtime and a bedtime routine and stick to it - rigorously.
- Avoid naps during the day.

Two more elements of good sleep hygiene seem obvious, but they should be stressed for people with ADHD.

- **Get in bed to go to sleep.** Many people with ADHD are at their best at night. They are most energetic, thinking clearest, and most stable after the sun goes down. The house is quiet and distractions are low. This is their most productive time. Unfortunately, they

have jobs and families to which they must attend the next morning, tasks made harder by inadequate sleep.

Bedtime Battles, Part 3

- **Avoid caffeine late at night.** Although many people without ADHD report that coffee actually helps them to sleep, there is usually a fine line between the right amount and too much caffeine. Caffeine is a potent diuretic, and while it may help some fall asleep, it causes awakening two or three hours later to void the bladder.

Treatment options

If the patient spends hours a night with thoughts bouncing and his body tossing, this is probably a manifestation of ADHD. The best treatment is a does of stimulant-class medication 45 minutes before bedtime. This course of action, however, is a hard sell to patients who suffer from insomnia. Consequently, once they have determined their optimal dose of medication, I ask them to take a nap an hour after they have taken the second dose.

Generally, they find that the medication's "paradoxical effect" of calming restlessness is sufficient to allow them to fall asleep. Most adults are so sleep-deprived that a nap is usually successful. Once people see for themselves, in a "no-risk" situation, that the medications can help them shut off their brains and bodies and fall asleep, they are more willing to try medications at bedtime. About two-thirds of my adult patients take a full dose of their ADHD medication every night to fall asleep.

What if the reverse clinical history is present? One-fourth of people with ADHD either don't have a sleep disturbance or have ordinary difficulty falling asleep. Stimulant-class medications at bedtime are not helpful to them. Dr. Brown recommends Benedryl, 25 to 50 mg, about one hour before bed. Benedryl is an antihistamine sold without prescription and is not habit-forming. The downside is that it is long-acting, and can cause sleepiness for up to 60 hours in some individuals. About 10 percent of those with ADHD experience severe paradoxical agitation with Benedryl and never try it again.

The next step up the treatment ladder is prescription medications. Most clinicians avoid sleeping pills because they are potentially habit-forming. People quickly develop tolerance to them and require ever-increasing doses. So, the next drugs of choice tend to be non-habit-forming, with significant sedation as a side effect. They are:

- **Melatonin.** This naturally occurring peptide released by the brain in response to the setting of the sun has some function in setting the circadian clock. It is available without prescription at most pharmacies and health food stores. Typically the dosage sizes sold are too large. Almost all of the published research on Melatonin is on doses of 1 mg or less, but the doses available on the shelves are either 3 or 6 mg. Nothing is gained by

using doses greater than one milligram. Melatonin may not be effective the first night, so several nights' use may be necessary for effectiveness.

- **Periactin.** The prescription antihistamine, cyproheptadine (Periactin), works like Benedryl but has the added advantages of suppressing dreams and reversing stimulant-induced appetite suppression. For those with no appetite loss, weight gain may limit Periactin's usefulness.

- **Clonidine.** Some practitioners recommend in a 0.05 to 0.1 mg dose one hour before bedtime. This medication is used for high blood pressure, and it is the drug of choice for the hyperactivity component of ADHD. It exerts significant sedative effects for about four hours.

- **Antidepressant medications**, such as trazadone (Desyrel), 50 to 100 mg, or mirtazapine (Remeron), 15 mg, used by some clinicians for their sedative side effects. Due to a complex mechanism of action, lower doses of mirtazapine are more sedative than higher ones. More is not better. Like Benedryl, these medications tend to produce sedation into the next day, and may make getting up the next morning harder than it was.

Problems waking up

Problems in waking and feeling fully alert can be approached in two ways. The simpler is a two-alarm system. The patient sets a first dose of stimulant-class medication and a glass of water by the bedside. An alarm is set to go off one hour before the person actually plans to rise. When the alarm rings, the patient rouses himself enough to take the medication and goes back to sleep. When a second alarm goes off, an hour later, the medication is approaching peak blood level, giving the individual a fighting chance to get out of bed and start his day.

A second approach is more high-tech, based on evidence that difficulty waking in the morning is a circadian rhythm problem. Anecdotal evidence suggests that the use of sunset/sunrise-simulating lights can set the internal clocks of people with Delayed Sleep Phase Syndrome. As an added benefit, many people report that they sharpen their sense of time and time management once their internal clock is set properly. The lights, however, are experimental and expensive (about $400).

Disturbances of sleep in people with ADHD are common, but are almost completely ignored by our current diagnostic system and in ADHD research. These patterns become progressively worse with age. Recognition of sleep disturbance in ADHD has been hampered by the misattribution of the initial insomnia to the effects of stimulant-class medications. We now recognize that sleep difficulties are associated with ADHD itself, and that stimulant-class medications are often the best treatment of sleep problems rather than the cause of them.
